

PROJECT DESCRIPTION

THIS PROJECT MODIFIES THE EXISTING SIGNAL AT MD 140 AND SILO HILL ROAD IN FREDERICK COUNTY FROM AN INTERSECTION CONTROL BEACON TO A FULLY ACTUATED TRAFFIC CONTROL SIGNAL. A NEW MAST ARM POLE WITH HAZARD IDENTIFICATION BEACONS IS BEING INSTALLED ALONG WEST-BOUND MD 140 PRIOR TO THE INTERSECTION. MD 140 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION CURRENTLY OPERATES IN A FLASHING MODE WITH THE MD 140 SIGNAL INDICATIONS FLASHING YELLOW AND THE SILO HILL ROAD SIGNAL INDICATIONS FLASHING RED. THESE SIGNALS WILL BE REPLACED WITH THREE AND FIVE SECTION SIGNAL HEADS. THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE FULL-TRAFFIC-ACTUATED MODE. THE EAST AND WEST BOUND MD 140 APPROACHES WILL HAVE EXCLUSIVE-PERMISSIVE LEFT TURN PHASES.

CONTROLLER REQUIREMENTS

INSTALL VIDEO DETECTION INTERFACE EQUIPMENT, FOUR CHANNEL LOOP DETECTOR AMPLIFIER, AND LOAD SWITCHES IN THE EXISTING POLE MOUNTED CABINET. (WORK TO BE PERFORMED BY SHA SIGNAL SHOP PERSONNEL)

CONTACT PERSONS FOR DISTRICT # 7 ARE AS FOLLOWS:

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CONTACT PERSONS FOR DOTS ARE AS FOLLOWS:

MR. RICHARD L. DAFF, SR.
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410-787-7676

THE POWER COMPANY IS:

ALLEGHENY POWER
P.O. BOX 1392
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(304) 367-3370

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
9016	FOUR CHANNEL LOOP DETECTOR AMPLIFIER, RACK MOUNT	EA	2
9086	VIDEO INTERFACE EQUIPMENT: 1-4 CAMERAS	EA	1
9570	SHEET ALUMINUM SIGNS - GROUND MOUNT CONSISTING OF: 2 - W3-3 (36" X 36") - GROUND MOUNT 2 - D95-25 (24" X 24") - GROUND MOUNT 2 - D-3(2) (VAR. X 24") - GROUND MOUNT	SF	50
9571	SHEET ALUMINUM SIGNS - POLE/MAST ARM MOUNT CONSISTING OF: 1 - W3-3 (36" X 36") - MAST ARM MOUNT	SF	9

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FINISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1001	MAINTENANCE OF TRAFFIC	EA	2
2002	TEST PIT EXCAVATION	CY	1
5001	F&I 5" WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING	LF	200
5002	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH	LF	210
5004	12 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING	LF	115

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FINISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
5005	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING	LF	80
6002	4 INCH CONCRETE SIDEWALK	SF	170
8001	F&I 12 INCH LED SIGNAL HEAD SECTION	EA	37
8004	F&I 8 INCH LED SIGNAL HEAD SECTION	EA	6
8017	F&I MAST ARM POLE & 60' MAST ARM ANY 'T' DIMENSION	EA	1
8020	F&I MICROLOOP PROBE (ANY LENGTH) LEAD IN CABLE UP TO 1000'	EA	2
8022	REMOVE AND DISPOSE OF MATERIAL AND EQUIPMENT	EA	1
8026	F&I VIDEO DETECTION CAMERA AND CABLE UP TO 500'	EA	4
8027	1 INCH DETECTOR SLEEVE - FLEXIBLE LIQUID TIGHT	LF	8
8035	F&I SCHEDULE 80 RIGID PVC CONDUIT UP TO 4"- TRENCHED	LF	725
8036	F&I SCHEDULE 80 RIGID PVC CONDUIT UP TO 4"- BORED	LF	85
8037	F&I WOOD SIGN SUPPORTS UP TO 4 X 6	LF	42
8038	F&I DETECTABLE WARNING SURFACES	SF	16
8039	INSTALL OVERHEAD OR GROUND MOUNTED SIGNS (INCLUDING ALL HARDWARE)	SF	70
8041	F&I NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	850
8047	F&I ELECTRICAL HANDHOLE	EA	7
8056	F&I ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	835
8057	F&I ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	255
8058	F&I ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG) TC	LF	190
8060	F&I SAW CUT FOR SIGNAL (LOOP DETECTOR)	LF	70

EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND RETURNED TO SHA.

ALL MATERIALS REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

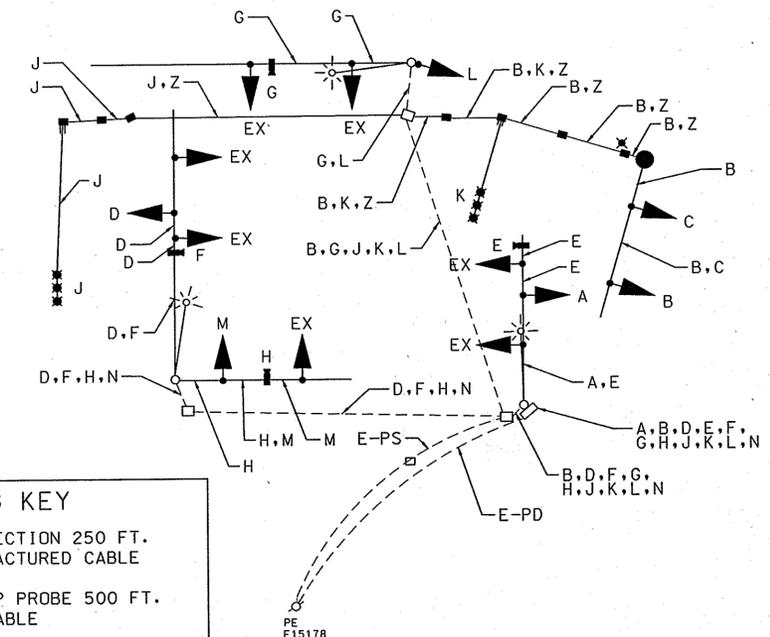
CONSTRUCTION DETAILS

- A. INSTALL 21 FT. MAST ARM POLE WITH 60 FT. MAST ARM (INSTALL BUTT PORTION ONLY), 2-12" YELLOW L.E.D. SIGNAL HEADS AND SIGN (NOTE: INSTALL 1-3 IN. PVC CONDUIT BEND IN POLE BASE)
- B. INSTALL ELECTRICAL HANDHOLE
- C. INSTALL MICRO-LOOP PROBE SET WITH 500' LEAD-IN
- D. INSTALL VIDEO DETECTION CAMERA ON EXISTING MAST ARM
- E. INSTALL LED VEHICULAR SIGNAL HEAD ON EXISTING SIGNAL POLE (SIDE OF POLE MOUNTED)
- F. INSTALL LED VEHICULAR SIGNAL HEAD ON EXISTING MAST ARM
- G. REPLACE EXISTING SIGNAL HEAD WITH NEW LED SIGNAL HEAD AS SHOWN
- H. INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
- J. INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
- K. INSTALL 4 INCH CONCRETE SIDEWALK WITH SIDEWALK RAMP (MD SHA STANDARD 655.12) WITH DETECTABLE WARNING SURFACE (MD SHA STANDARD 655.40) AND DEPRESSED CURB AND GUTTER (MD SHA STANDARD 620.03)
- L. INSTALL 24 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
- M. INSTALL 12 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
- N. USE EXISTING CONDUIT
- P. USE EXISTING HANDHOLE
- Q. USE EXISTING SIGNAL POLE
- R. USE EXISTING POLE MOUNTED CABINET. INSTALL VIDEO DETECTION INTERFACE EQUIPMENT AND RACK MOUNTED FOUR CHANNEL AMPLIFIER
- S. INSTALL 1 INCH DETECTOR SLEEVE - FLEXIBLE LIQUID TIGHT
- T. REMOVE EXISTING GROUND MOUNTED SIGN AND WOOD POST
- U. REMOVE EXISTING PAVEMENT MARKINGS
- V. REMOVE EXISTING GROUND MOUNTED SIGN. INSTALL NEW SIGN ON 4" X 6" WOOD POST.
- W. REMOVE EXISTING GROUND MOUNTED SIGN SUPPORT AND RELOCATE EXISTING SIGN UPRIGHT ONTO PROPOSED SIGNAL POLE.
- X. INSTALL 20' STREET LIGHTING ARM WITH 250 WATT HPS LUMINAIRE AND PHOTOCCELL ONTO EXISTING SIGNAL POLE.

PHASE CHART

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13
Phase 1 & 5	←G-R	←G-R	R	FL/Y	FL/Y	←G-R	←G-R	R	R	R	R	R	R
1 & 5 Change	CHANGES TO PHASES 1 & 6 OR 2 & 5 OR 2 & 6												
Phase 1 & 6	←G-G	←G-G	Y	FL/Y	FL/Y	R	R	R	R	R	R	R	R
1 Change	Y	Y	Y	FL/Y	FL/Y	R	R	R	R	R	R	R	R
Phase 2 & 5	R	R	R	FL/Y	FL/Y	←G-G	←G-G	G	G	R	R	R	R
5 Change	R	R	R	FL/Y	FL/Y	Y	Y	Y	Y	R	R	R	R
Phase 2 & 6	G	G	G	FL/Y	FL/Y	G	G	G	R	R	R	R	R
2 & 6 Change	Y	Y	Y	FL/Y	FL/Y	Y	Y	Y	Y	R	R	R	R
Phase 4 & 8	R	R	R	FL/Y	FL/Y	R	R	R	R	G	G	G	G
4 & 8 Change	R	R	R	FL/Y	FL/Y	R	R	R	R	Y	Y	Y	Y
Flashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R

WIRING DIAGRAM



WIRING KEY

- E, F, G, H VIDEO DETECTION 250 FT. PRE-MANUFACTURED CABLE
- J, K MICRO-LOOP PROBE 500 FT. LEAD-IN CABLE
- N 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG) TC
- B, C, L, M 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
- A, D 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
- EX USE EXISTING CABLES
- E-PS EXISTING UNDERGROUND POWER
- E-PD EXISTING TELEPHONE SERVICE
- Z STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- ⊗ GROUND ROD

TOD No.: AT783-19
SHA No.: FR558A56/B56
MD 140 @ Silo Hill Road

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 140 AT SILO HILL ROAD
EMMITSBURG, MARYLAND

GENERAL INFORMATION SHEET

SCALE	NONE	DATE	10/2006	CONTRACT NO.	AT7835185
DESIGNED BY	TC	COUNTY	FREDERICK		
DRAWN BY	TC	LOGMILE	10014004.80		
CHECKED BY	DAE	TIMS NO.	1041		
FAP NO.		TOD NO.			
TS NO. 4209-B-G1	DRAWING	-	OF	SHEET NO.	2 OF 2

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BY: \$USER\$